



Washington State Department of
Community, Trade and Economic Development
State Building Code Council



Environmental Health
Programs
Division of Drinking Water

Cross-Connection Control

Background

Backflow prevention assemblies are installed to prevent backflow of contaminants into drinking water through cross-connections. A **cross-connection** is any actual or potential physical connection between a public water system or consumer's water system and any source of non-potable liquid, solid or gas that could contaminate the potable water supply by backflow. **Backflow** is the reversal of flow of water or other substances into the public water system or consumer's potable water system. Under backflow conditions, unprotected cross-connections can introduce biological, chemical and/or physical contaminants into the drinking water supply. These contaminants can lead to waterborne disease outbreaks, chemical poisonings, physical injuries and sometimes death.

Regulatory Setting

The **Department of Health (DOH) Division of Drinking Water** regulates public water systems in Washington. Revised cross-connection control (CCC) regulations, **WAC 246-290-490**, for public water systems became effective April 9, 1999. All public water systems (purveyors) must develop and implement CCC programs. CCC programs protect public health by preventing contamination of the public water system through cross-connections. By definition, **public water systems** include collection, storage, treatment and distribution facilities *under the purveyor's control*.

From 1983 until April 1999, WAC 246-290-490 required purveyors to...“ensure the inspection and regulation of plumbing”... and appeared to hold purveyors responsible for CCC to the consumer's free-flowing tap. This requirement was inconsistent with federal and state safe drinking water laws. In addition, it created jurisdictional conflicts between purveyors and local administrative authorities (building officials). The revised WAC 246-290-490 clarifies that purveyors are responsible for protecting only the public water system (as defined above) from contamination via cross-connections.

The **State Building Code Council (SBCC)** is responsible for adoption and interpretation of the plumbing code in Washington. The **1997 Uniform Plumbing Code (UPC), WAC 51-46**, amended for Washington, became effective July 1, 1998. The UPC's purpose is to protect the health, safety and welfare of occupants of premises. Section 603, Cross-Connection Control, of the UPC is designed to protect the consumer's potable water system from contamination via cross-connections.

Regulatory Setting

(continued)

The UPC applies within the property lines of the consumer's premises (from the meter or property line to the final points of use). At a minimum, local administrative jurisdictions must enforce the UPC as amended for Washington.

Both WAC 246-290-490 and WAC 51-46 require purveyors and local administrative authorities to coordinate with each other on CCC issues. The extent of coordination may vary from sharing basic information to implementation of joint programs. In addition, both WACs require installation of backflow preventers commensurate with the degree of hazard and annual inspections and testing for backflow preventers.

Key Points

- Both WAC 246-290-490 and the UPC are designed to protect public health by preventing contamination of drinking water through cross-connections. The intent of WAC 246-290-490 is to protect the public water system and the intent of the UPC is to protect the consumer's water system.
- To date, many purveyors have been implementing CCC programs that address both the public water system and the consumer's water system. Now that the CCC regulations have been clarified, many purveyors will likely be adjusting their CCC programs to focus solely on protection of the public water system. Purveyors do have the option to rely on in-premises assemblies for non-high hazard facilities if certain conditions are met.
- Many local authorities are not aware that DOH has clarified WAC 246-290-490 and are unsure about their responsibility for CCC under the UPC. Many local authorities and plumbers also lack specific education and training in CCC.
- WAC 246-290-490 clarifies that purveyors are not required to conduct routine surveys to address cross-connections within the consumer's water system. Also, the current UPC does not mandate that local jurisdictions conduct routine CCC surveys. *Without periodic CCC surveys, public health protection may be reduced within the consumer's premises.*

Public Health Issues

- Many purveyors have been sending out annual assembly testing notices to consumers and keeping backflow preventer records for assemblies that protect the public water system and assemblies that protect the consumer's water system. However, purveyors are required to keep records only on assemblies that protect the public water system. Local jurisdictions are not mandated to monitor the annual inspection and testing of assemblies used to protect the consumer's water system. *Without enforcement of annual assembly testing and tracking of test results, public health protection may be reduced within the consumer's premises.*

What We're Doing

DOH and the SBCC are working together to educate purveyors and local administrative authorities on CCC issues. These educational efforts include providing information on the public health significance of CCC, interpreting the revised regulations, clarifying the respective jurisdictions of purveyors and local authorities and identifying ways for purveyors and local authorities to work together to protect public health.

What Purveyors and Local Authorities Can Do Now

Purveyors and local administrative authorities (if not already doing so) can start coordinating with each other on CCC issues. Discussion topics might include:

- Lines of authority and responsibility;
- Plan review and inspection processes;
- Communication/notification of consumers;
- Data management;
- Transfer or sharing of applicable records;
- Conditions for purveyor reliance upon in-premises assemblies;
- Water quality complaint investigation procedures;
- Backflow incident response procedures;
- Coordination of enforcement actions; and
- Criteria for defining an imminent health hazard.

Purveyors and local authorities are encouraged to enter into written agreements to delineate their respective CCC responsibilities.

Purveyors and local authorities are also encouraged to keep informed on CCC issues through involvement in their respective regional professional organizations. These include the following:

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| 1. Spokane Region CCC Committee (SRC4) | Denny Lopp
(509) 928-4540 |
| 2. Western Washington Cross-Connection Prevention Professionals Group (The Group) | Karen Lanning
(206) 233-2633 |
| 3. Washington Association of Building Officials (WABO) | Dave Cantrell
(425) 388-3311
Extension 2172 |

Conclusions

Purveyors and local authorities face many regulation implementation challenges. DOH plans to develop, with assistance from the SBCC, purveyors and local authorities, guidance to complement the revised CCC regulations. The guidance will address purveyor/local authority coordination and will be available to water purveyors and local jurisdictions. In addition, the SBCC and WABO plan to explore opportunities for education on CCC for local authorities and plumbers.

More Information

Terri Notestine
CCC Program Manager
DOH Drinking Water Program
(360) 236-3133

Al Rhoades
UPC Technical Specialist
State Building Code Council
(360) 586-8999